Nicotinamide Deficiency in Primary Open-Angle Glaucoma

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Résumé en anglais	Purpose: To investigate the plasma concentration of nicotinamide in primary open-angle glaucoma (POAG). Methods: Plasma of 34 POAG individuals was compared to that of 30 age- and sex-matched controls using a semiquantitative method based on liquid chromatography coupled to high-resolution mass spectrometry. Subsequently, an independent quantitative method, based on liquid chromatography coupled to mass spectrometry, was used to assess nicotinamide concentration in the plasma from the same initial cohort and from a replicative cohort of 20 POAG individuals and 15 controls. Results: Using the semiquantitative method, the plasma nicotinamide concentration was significantly lower in the initial cohort of POAG individuals compared to controls and further confirmed in the same cohort, using the targeted quantitative method, with mean concentrations of 0.14 µM (median: 0.12 µM; range, 0.06-0.28 µM) in the POAG group (-30%; P = 0.022) and 0.19 µM (median: 0.18 µM; range, 0.08-0.47 µM) in the control group. The quantitative dosage also disclosed a significantly lower plasma nicotinamide concentration (-33%; P = 0.011) in the replicative cohort with mean concentrations of 0.14 µM (median: 0.14 µM; range, 0.09-0.25 µM) in the POAG group, and 0.19 µM (median: 0.21 µM; range, 0.09-0.26 µM) in the control group. Conclusions: Glaucoma is associated with lower plasmatic nicotinamide levels, compared to controls, suggesting that nicotinamide supplementation might become a future therapeutic strategy. Further studies are needed, in larger cohorts, to confirm these preliminary findings.

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Liens
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